

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
AVIATION DATA SYSTEMS (AUST) PTY)
LTD.)
)
Request for Waiver of Part 87 Rules to Allow)
Certification of System to Test Aircraft Data Link)
Systems)

ORDER

Adopted: January 29, 2007

Released: January 30, 2007

By the Deputy Chief, Mobility Division, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. On September 15, 2005, Aviation Data Systems (Aust) Pty Ltd. (ADS) filed a request for waiver of Section 87.131 of the Commission's Rules¹ to permit equipment certification of its MPRT-500, a new system to test aircraft data link systems.² For the reasons set forth below, we deny ADS's request for waiver.

II. BACKGROUND

2. The MPRT-500 is a device designed to test aircraft data link systems on the tarmac close to the aircraft and transmit and decode responses back from the aircraft. It is designed to support two protocols, Aircraft Communication Addressing and Reporting System (ACARS) and Very High Frequency Digital Link (VDL2). These protocols use G1D emission,³ but Section 87.131 does not authorize G1D emission for radionavigation land test (RLT) equipment.⁴

3. We note there are two types of RLT stations used to test aircraft navigation systems. An Operational Test Facility (OTF) is installed at a fixed location, typically at the end of a runway, to provide a low power signal that is used by pilots as an operational test of the navigation system prior to take-off. A Maintenance Test Facility (MTF) is a portable station used by aircraft manufacturers and technicians to test and verify the proper operation of navigation equipment when it is installed in airplanes or repaired.

¹ 47 C.F.R. § 87.131 (listing authorized emission and maximum power in the Aviation Services).

² Letter dated September 15, 2005 from Thomas N. Cokenias, Agent for ADS, to Federal Communications Commission, Wireless Telecommunications Bureau (*ADS Letter*).

³ Emissions are designated by an alphanumeric code that indicates the type of modulation of the main carrier, nature of the signal(s) modulating the main carrier, and the type of information to be transmitted. *See* 47 C.F.R. § 2.201(b). G1D is a type of phase modulated digital emission. *See* 47 C.F.R. § 2.201(e).

⁴ 47 C.F.R. § 87.131 (providing, in pertinent part, for the following authorized emission/maximum power for RLT stations: for 108.150 MHz, A9W/1 milliwatt; for 334.550 MHz, A1N/1 milliwatt; and for other VHF and UHF frequencies, M1A, XXA, A1A, A1N, A2A, A2D, A9W/1 watt).

The Commission licenses RLT stations (OTF and MTF) and requires, with some exceptions, that these transmitters be certificated.⁵ ADS believes the most appropriate description of the MPRT-500 is RLT equipment.⁶ Consequently, ADS requests a waiver of Section 87.131. It states that this will provide valuable test data to the aviation community and present no increased risk of interference to aircraft receivers in the ramp vicinity.

4. On May 2, 2006, the Wireless Telecommunications Bureau sought comments on ADS's request for waiver.⁷ Comments were filed by Boeing Company (Boeing) and Aviation Spectrum Resources, Inc. (ASRI).⁸ ADS filed reply comments to ASRI's comments.

III. DISCUSSION

5. Section 1.925 of the Commission's Rules provides that we may grant a waiver if it is shown that (a) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and grant of the requested waiver would be in the public interest; or (b) in light of unique or unusual circumstances, application of the rule(s) would be inequitable, unduly burdensome, or contrary to the public interest, or the applicant has no reasonable alternative.⁹ For the reasons set forth below, we conclude that grant of the requested waiver is not warranted.

6. While Boeing supports ADS's request for waiver in the near term, and also supports the future adoption of rules to permit certification of data link test equipment, it expresses concerns about the potential for the MPRT-500 to cause interference to important aircraft communications and navigation systems, and believes that technical restrictions should be imposed to ensure the safety of aviation communications and navigation.¹⁰ Boeing notes that ADS requests authority to operate anywhere in the 118-137 MHz band. Boeing believes that tuning to any channel in that band could be dangerous to various critical aircraft communications systems that operate in that band.¹¹ Boeing also expresses concern that the

⁵ See Amendment of Part 87 of the Rules Concerning Requirements for Remote Communications Outlets and Radionavigation Land Test Stations, *Order*, FCC No. 93-505, 8 FCC Rcd 8557 (1993). The equipment authorization process formerly known as type acceptance was combined with the equipment authorization process known as certification in 1998, with the combined process termed certification. See Amendment of Parts 2, 15, 18 and Other Parts of the Commission's Rules to Simplify and Streamline the Equipment Authorization Process for Radio Frequency Equipment, *Report and Order*, ET Docket No. 97-94, 13 FCC Rcd 11415, 11419-20 ¶ 10 (1998).

⁶ Currently, ramp test sets are used to test other systems such as Distance Measuring Equipment, VHF Omnidirectional Radio Range, Air Traffic Control Transponders, and Instrument Landing Systems. The MPRT-500 differs in that it is used to test aircraft data links and operates in the 118-137 MHz band, rather than the 108-118 MHz navigational band where other ramp test sets typically operate.

⁷ Wireless Telecommunications Bureau Seeks Comment on Request for Waiver by Aviation Data Systems of Part 87 Rules to Allow Certification of a System to Test Aircraft Data Link Systems, *Public Notice*, 21 FCC Rcd 5008 (WTB PSCID 2006).

⁸ ASRI is the successor to Aeronautical Radio, Inc. (ARINC) and is the industry licensee for the air transport industry's aeronautical enroute and fixed services.

⁹ 47 C.F.R. § 1.925(b)(3). See also *WAIT Radio v FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

¹⁰ Boeing comments at 5-6.

¹¹ *Id.* at 3.

power levels requested by ADS are excessive.¹² Further, Boeing believes that measures need to be taken to ensure that the data link test equipment does not interfere with or take control of the operations of non-target aircraft in the area.¹³ Finally, Boeing notes that ADS requested only G1D emissions and believes ADS should request an additional emission designator of A2D to support ACARS.¹⁴

7. ASRI opposes ADS's request for waiver, and believes ADS should use existing options such as applying to the Commission to certify the MPRT-500 as an aviation ground station transmitter and license it under Part 87 Rules for the aeronautical enroute service.¹⁵ ASRI shares Boeing's concerns about the proposed power levels requested by ADS and also expresses concerns of not only interference but of the device taking control of the operations of non-target aircraft in the area.¹⁶ ASRI states that aircraft stations would respond to this device with a signal that could radiate up to 25 watts, posing a threat for interference.¹⁷ Further, ASRI argues that the waiver request fails to demonstrate a need for equipment to test the data link because aircraft operators can currently perform tests by transmitting to and receiving an acknowledgement from existing Aeronautical Radio, Inc. (ARINC) or Société Internationale de Télécommunications Aéronautiques (SITA)¹⁸ enroute ground stations.¹⁹ Finally, ASRI notes that the industry, through the Airline Electronic Engineering Committee (AEEC) Data Link Systems (DLK) Subcommittee, is currently studying this type of test equipment and is considering issues and developing proposals for these devices.²⁰

8. ADS argues that in the absence of an existing category for data link systems test equipment that the RLT station, specifically the MTF, is the most suitable category to use to certify the MPRT-500. ADS points out that, like RLT stations, the MPRT-500 is intended for maintenance testing and shares the same technical characteristics as the operational transmitters they are testing. ADS argues that this well-established maintenance function should apply to its MPRT-500 device.²¹ ADS states there is a need for the MPRT-500 because of numerous problems with the practice of using existing operational enroute ground stations to test data links²² and that allowing the use of the MPRT-500 will allow testing

¹² *Id.* at 4; *see also ADS Letter* at 2. Specifically, ADS proposes power levels of 50 milliwatts and 1 watt.

¹³ Boeing comments at 4.

¹⁴ *Id.* at 5.

¹⁵ ASRI comments at 2. Aeronautical enroute stations are used for air-ground operational control communications to aircraft along domestic or international air routes, and may not be used for public correspondence. *See* 47 C.F.R. § 87.261(a).

¹⁶ ASRI comments at 2-4.

¹⁷ *Id.* at 3.

¹⁸ SITA provides aeronautical enroute services in Europe.

¹⁹ ASRI comments at 3.

²⁰ *Id.* at 3. The AEEC is an international body of airline representatives that leads the development of technical standards for airborne electronic equipment—including avionics and in-flight entertainment equipment—used in commercial, military, and business aviation. The DLK Systems Subcommittee develops and maintains a set of ARINC Standards that promote reliable, uniform, and cost efficient transfer of data between the aircraft and various locations on the ground.

²¹ ADS reply comments at 1-2.

without engaging the operational network.

9. ADS argues that the risk of interference to important aircraft communications and navigation systems and the risk of its device taking control of the operations of non-target aircraft in the area have been fully considered and addressed in the development of the MPRT-500.²³ It states that not only does the MPRT-500 comply with emission limitations of the Commission's Rules,²⁴ the International Civil Aviation Organization's (ICAO) VDL Mode 2 Technical Manual,²⁵ and RTCA DO-281 A,²⁶ but has additional features such as restricting communications to registered aircraft and ground stations by use of approved standard identification codes, and also software solutions to guard against interference.²⁷ ADS further states it will support any AEEC-DLK Subcommittee findings and recommendations and incorporate required reasonable changes that are adopted and benefit the industry.²⁸ Finally, in support of its request ADS submitted an email from Rockwell Collins supporting the usefulness of the MPRT-500.²⁹

IV. CONCLUSION

10. We agree with ADS that the nature of the MPRT-500, used on the tarmac close to an aircraft for testing, more closely resembles and should be considered an MTF of an RLT station. We agree that it would be an unnecessary cost and an administrative burden to require licensing of these devices. We are concerned, however, that ADS's proposed power levels could cause harmful interference to important aviation safety communications. We note meeting minutes from the AEEC-DLK Subcommittee November 29 - December 1, 2005 meeting that expressed concerns about the effects of aircraft transmitting on live data link frequencies at full power, and suggested further study to develop proposed specifications.³⁰ Further, we note that RLT stations operate on a very low power because they are not used for communications and are used solely for testing of radionavigation equipment. We believe that allowing the higher power levels in connection with G1D emissions, taken together with the threat of interference that could have an adverse affect upon aviation safety, would frustrate the underlying purpose of the rules that limit the power of RLT stations.³¹

(Continued from previous page)

²² *Id.* at 2-3. Specifically, ADS notes that airport terminal layout and propagation shadows cause poor communications, current link test are only partial tests, cockpit congestion during maintenance causes problems, coordination with other remotely located staff is needed, not all facilities have access to ARINC or SITA ground stations, military transport aircraft require unequivocal evidence of serviceability before departure, and laboratory testing prior to use cannot adequately reproduce necessary operational characteristics.

²³ *Id.* at 4.

²⁴ See 47 C.F.R. § 87.139(k).

²⁵ See Manual on VHF Digital Link (VDL) Mode 2 (Doc 9776).

²⁶ See DO-281A, Minimum Operational Performance Standards for Aircraft VDL Mode 2 Physical, Link and Network Layer, November 8, 2005.

²⁷ ADS reply comments at 5.

²⁸ *Id.* at 4.

²⁹ *Id.* at Attachment 1.

³⁰ AEEC DLK Systems Subcommittee Report, dated December 9, 2005, Reference No. 05-279/DLK-998 sap.

³¹ See 47 C.F.R. § 87.131.

11. Thus, we conclude that ADS has not shown good cause for waiver of Section 87.131 of the Commission's Rules to permit type certification of its device. Therefore, we deny the waiver request.

V. ORDERING CLAUSES

12. Accordingly, IT IS ORDERED, pursuant to Sections 4(i) and 303(i) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(i), and Section 1.925 of the Commission's Rules, 47 C.F.R. § 1.925, that the Request for Waiver of Section 87.131 of the Commission's Rules, 47 C.F.R. § 87.131, filed by Aviation Data Systems (Aust) Pty Ltd. on September 15, 2005, IS DENIED.

13. This action is taken under delegated authority pursuant to Sections 0.131 and 0.331 of the Commission's Rules, 47 C.F.R. §§ 0.131, 0.331.

FEDERAL COMMUNICATIONS COMMISSION

Scot Stone
Deputy Chief, Mobility Division
Wireless Telecommunications Bureau